UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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June 2, 2020

Elizabeth Roddy
Remedial Project Manager
Department of the Navy
Base Realignment and Closure Program Management Office West
33000 Nixie Way, Building 50
San Diego, CA 92147

Subject: Navy Responses to EPA Comments on the Draft Background Soil Study Report
Hunters Point Naval Shipyard Superfund Site

Dear Ms. Roddy:

Thank you for providing responses to EPA comments on a draft version of the Background Soil Study Report for the Hunters Point Naval Shipyard Superfund Site in San Francisco, California. The draft report is dated February 2020; EPA's comments on the draft report are dated April 17, 2020; and the Navy's responses to comments were made available to EPA on May 18, 2020.

We have considered the Navy's written responses and reviewed a redline version of the draft Background Soil Study Report ("Report"). As described in the Report, the Navy will use Background Threshold Values (BTVs) calculated from the offsite data (the San Bruno Mountain reference background area) to help determine compliance with cleanup requirements in Site Records of Decision (RODs).

- The BTVs calculated for Thorium-232, Plutonium-239, Uranium-235, and Strontium-90 are less than their current Remediation Goals (RGs), and therefore will not affect the cleanup.
- The BTV for Radium-226 (Ra-226) will determine the RG for Ra-226 in accordance with Site Records of Decision which define the RG as 1 picoCurie per gram (pCi/g) plus background (1.861 pCi/g).
- The BTV for Cesium-137 (Cs-137) (0.141 pCi/g) is higher than the current RG of 0.113 pCi/g. In accordance with CERCLA policy and guidance, EPA does not expect the Navy to remediate soil with radionuclide concentrations at or below the Cs-137 BTV. We note that the 0.141 pCi/g BTV represents a negligible increase in incremental cancer risk compared to the RG. Nevertheless, the Navy must appropriately document this post-ROD change as outlined in EPA Superfund guidance.

The report describes a two-step evaluation for determining compliance with Site cleanup requirements.

In the primary evaluation, sample results from the radiological retesting will be compared to the BTV for Cs-137 and the RGs for the other radionuclides of concern. If the concentrations of all of the Cs-137 results are less than or equal to the Cs-137 BTV, no remediation or further evaluation of

the sample results is expected. Similarly, if the concentrations of the other radionuclides of concern are less than or equal to their RGs, no remediation or further evaluation of the sample results is expected. If a result exceeds the Cs-137 BTV or an RG for the other radionuclides, a secondary evaluation may occur.

A secondary evaluation may be appropriate for radionuclides in which the BTV is equal to or near the RG. Background concentrations vary across the Site and the BTVs may not be representative of the full range of background concentrations at the Site.

In the secondary evaluation, the Navy may evaluate whether a sample result exceeding an RG or the Cs-137 BTV represents background conditions rather than Site-related contamination. The Report describes some of the information that the Navy may evaluate in support of such a claim. Relevant information may include: 1) whether the sample was collected in an area with a known or suspected release of the radionuclide; 2) whether the sample is comparable to background soils with a similar soil type, color, and/or local environment; 3) whether the sample is nearby other elevated sample results; and 4) whether the sample is in secular equilibrium with its parent radionuclides (this is relevant for Ra-226 only).

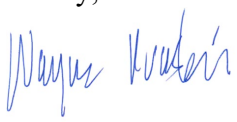
After completing the two-step evaluation, if the Navy believes that a sample result exceeding an RG or the Cs-137 BTV represents background conditions, the Navy should submit its supporting evidence to EPA and its State regulatory partners. The agencies will evaluate the information on a sample-by-sample basis. We are not agreeing at this time that any sample results exceeding the Cs-137 BTV or the RGs for the other radionuclides represent background. The burden of proof will be on the Navy to demonstrate any sample result above the Cs-137 BTV or the RGs for other radionuclides is not site-related contamination.

Consistent with our comments on the fourth five-year review, we propose that a decision about the need to modify the RGs based on health risk be deferred until site data are available.

Several additional comments are provided in an enclosure to this letter. We look forward to receiving a final version of the Report.

Please contact me at 415-972-3181 or praskins.wayne@epa.gov with any questions.

Sincerely,



Wayne Praskins
EPA Project Manager

Enclosure

cc: Nina Bacey, California Department of Toxic Substances Control
Terry Han, California Department of Public Health
Tina Low, San Francisco Regional Water Quality Control Board
Amy Brownell, San Francisco Department of Public Health

EPA Comments on the "Redline Final" Version of the Background Soil Study Report
Hunters Point Naval Shipyard Superfund Site
Redline Version dated May 2020; Enclosure to EPA Comments dated June 2, 2020

Evaluation of the Response to EPA Comment 5 (Interpretation of Q-Q Plots): EPA's comment asked about one of the Q-Q plots provided as part of the comparison of laboratory analytical methods. The redline version of the Report includes a statement in Section 7.2.1.3 that "If the Q-Q plot for an ROC represents a continuous display without breaks or inflection points of significant magnitude, then the entire dataset represented by the QQ plot is considered to represent a single statistical population (Singh et al., 2014)."

We agree that a Q-Q plot without breaks or inflection points may provide supporting evidence that the dataset represents a single statistical population. It should not, however, be the only line of evidence (LOE) considered. Potential differences in sample collection methodology, soil type, or other factors also need to be considered.

Evaluation of the Response to EPA Comment 7 (Table 5-35 Errors): EPA's comment noted one or more apparent errors in Table 5-35. The Response to Comment (RTC) states that the table will be corrected but the table in the redline version of the Report appears unchanged. Please ensure that the necessary changes are made to Table 5-35 in the final version of the report.

Evaluation of the Response to EPA Comment 10 (Statistical Outliers): EPA's comment noted that the 0.477 pCi/g Cs-137 result from RBA-4 is more than three times greater than the next highest sample from any of the five RBAs. The RTC notes that the 0.477 pCi/g result is within the range of background reported in the literature.

The 0.477 result is from RBA-4, not the San Bruno area, and is not used in calculating the 0.141 pCi/g Cs-137 BTV. Nevertheless, we advise caution in using the value in any future BTV calculations especially when a statistically-based upper limit such as a USL is used. The presence of an extreme value can skew and adversely impact the calculated value.

Evaluation of the Responses to Comment 13, 14 (BTVs Based on Maximum Detection Limits):

As stated in our April 2020 comment, we do not support the use of a maximum detection limit to calculate a BTV when the detection limit is elevated due to sampling or analytical limitations such as limited sample volume or limited count time.

Evaluation of the Responses to Comment 19 (Secondary Evaluation of Sample Results)

EPA's April 2020 comment proposes the calculation of BTVs using the San Bruno RBA-S background data and allows for a secondary evaluation of sample results exceeding a BTV to determine whether the result represents background or Site-related contamination. The RTCs indicate agreement with EPA's proposal to use BTVs based on the RBA-S data and to allow for a secondary evaluation of sample results exceeding a BTV.

Section 7.2.1.2 in the redline version of the report states that, as part of a secondary evaluation of the data, "Comparisons will be performed using a common null hypothesis that concentrations in the on-site sample population are less than or equal to background concentration levels measured in the RBA." We do not support this approach. If hypothesis testing is used as part of a secondary

evaluation, the null hypothesis should be that the concentrations in the on-site sample population are greater than or equal to the concentrations in the background dataset. EPA and its regulatory partners would also need to approve the acceptable Type 1 and Type 2 error rates and other key provisions of the statistical testing.

Also, in Section 7.2.1.1 of the redline version of the Report and in the Executive Summary, there is a statement that "The Navy will use data collected from onsite RBA-1, RBA-2, and RBA-4 as part of a secondary evaluation when determining whether a sample result that exceeds both the RG and offsite BTV represents background or site-related contamination." It is premature to conclude that any or all of the onsite data will be comparable to future sample data. In the referenced sentence, please change "will use" to "may consider."

Please see the cover letter for further discussion of EPA expectations regarding a secondary evaluation of sample results.